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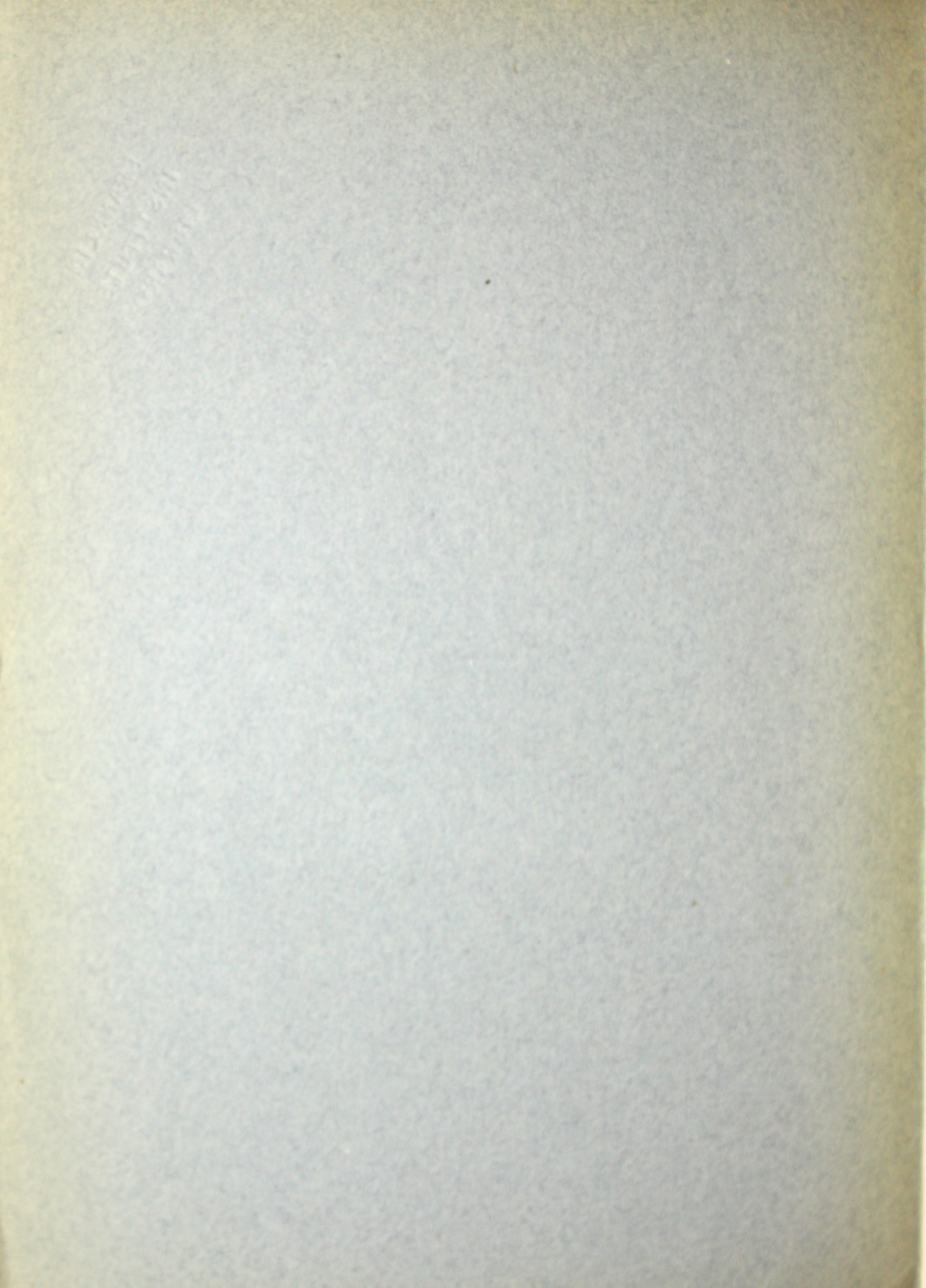
DISC
AND
PROPELLER
FANS



CATALOGUE

No. 116,

B. F. Sturtevant Co.
Boston · Mass.



ILLUSTRATED CATALOGUE
OF
THE STURTEVANT
DISC
AND PROPELLER
FANS

B. F. STURTEVANT CO.

BOSTON, MASS.

NEW YORK.

PHILADELPHIA.

CHICAGO.

STURTEVANT ENGINEERING CO.

LONDON.

GLASGOW.

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CATALOGUE No. 116.

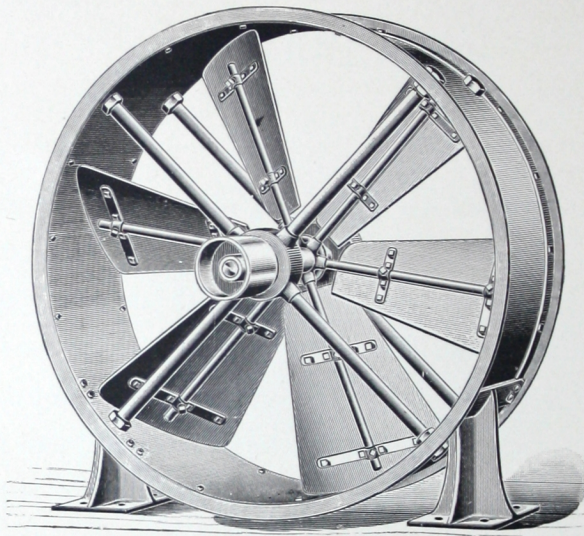
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SMITH & PORTER PRESS,
BOSTON, MASS.

INTRODUCTION.

The field of usefulness and highest efficiency for disc and propeller fans is that in which resistances are slight and velocities low. Then and then only are fans of this type in any sense competitors of the cased fan with centrifugal discharge. For the forcing of air through extended piping systems, for the production of mechanical draft or for the conveying of light material, the latter type is necessary. But within their own somewhat limited field the disc and the propeller fan cannot be excelled for efficiency, although the centrifugal type can be used to advantage where the conditions demand.

B. F. STURTEVANT CO.



THE STURTEVANT

DISC FAN.

THE STURTEVANT

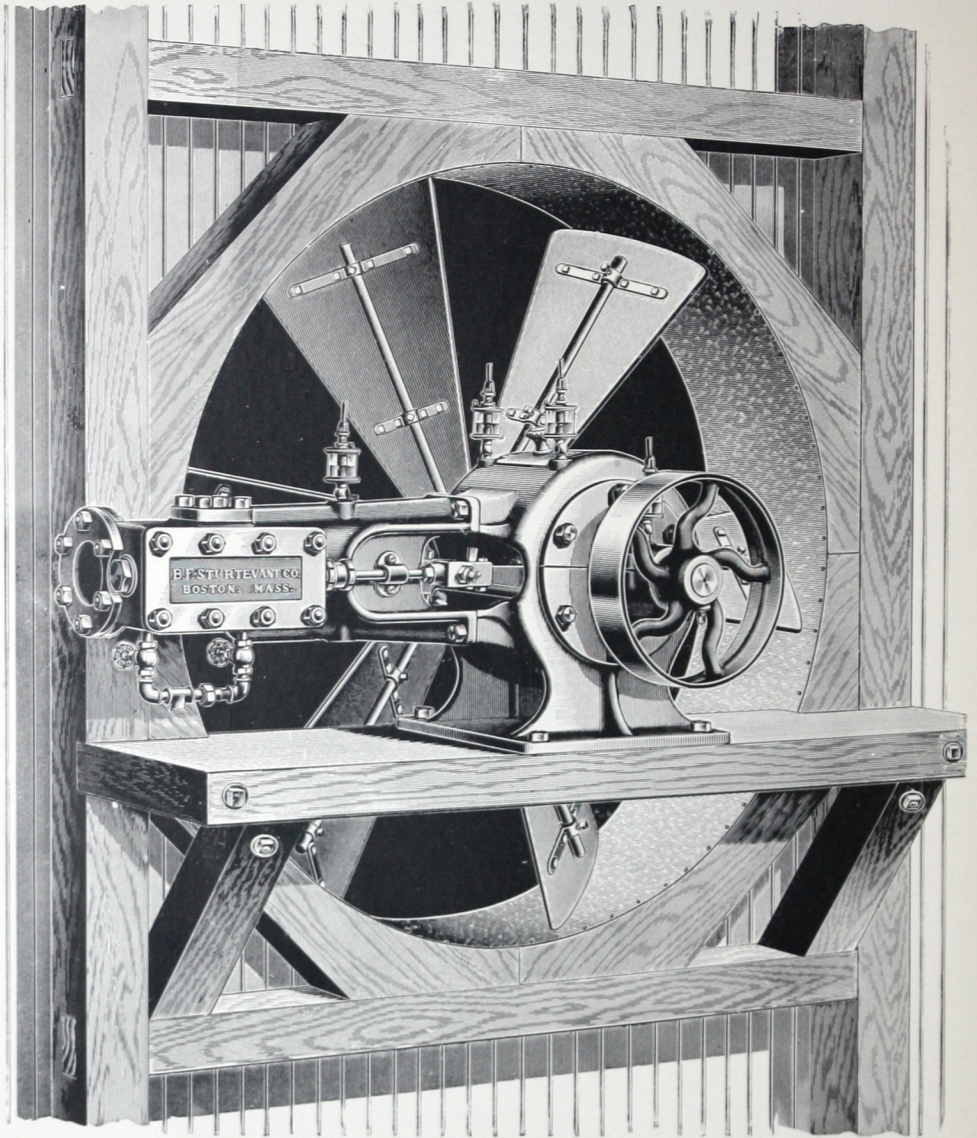
DISC FANS.

Application. — For moving large volumes of air under low pressure with a minimum expenditure of power, the Sturtevant Disc and Propeller Fans are best adapted. Under such conditions their efficiency is high. But when the resistances are considerable, the peripheral discharge type of fan is more economical.

Construction. — The Sturtevant Disc Fan consists of a substantial hub into which are cast radial steel arms to which flat steel plate blades are rigidly attached. These inclined planes force the air through in lines parallel to the shaft. By reversing the angle of the blades, or the direction of rotation, the air may be caused to move in the opposite direction. The independent wheel is enclosed in a substantial circular frame with two self-oiling bearings, a pulley and supporting feet. The Steam Disc Fan is provided with a high-grade horizontal engine arranged as on succeeding page, or with engine of vertical type in the case of the smaller sized fans.

Diameter of Fan.	Revolutions per Minute.	Fan with Pulley.			Fan with Engine.			
		Dia. and Face of Pulley.	Weight in Lbs.	Price.	For High Pressure.		For Low Pressure.	
					Size Engine.	Price.	Size Engine.	Price.
18 in.	550-1100	4 x 2½	100	\$30.00	2½ x 2	\$190.00		
24 "	400- 800	5 x 2½	132	40.00	3 x 2½	210.00		
30 "	325- 650	6 x 3½	166	50.00	3½ x 3	230.00		
36 "	275- 550	7 x 4½	190	60.00	4 x 4	240.00	6 x 4	\$290.00
42 "	235- 470	8 x 4½	290	80.00	4 x 4	250.00	6 x 4	300.00
48 "	200- 400	8 x 5½	350	100.00	4 x 4	260.00	6 x 4	310.00
54 "	175- 350	9 x 5½	425	120.00	5 x 5	300.00	8 x 5	350.00
60 "	165- 330	10 x 6½	535	150.00	5 x 5	320.00	8 x 5	370.00
66 "	150- 300	10 x 7½	685	175.00	5 x 5	340.00	8 x 5	390.00
72 "	135- 270	12 x 7½	875	200.00	6 x 6	420.00	10 x 6	470.00
84 "	120- 240	14 x 8½	1,025	250.00	6 x 6	450.00	10 x 6	500.00
96 "	100- 200	16 x 10½	1,175	300.00	6 x 8	600.00	12 x 8	650.00
108 "	90- 180	18 x 12½	1,470	350.00	8 x 8	700.00	12 x 8	750.00
120 "	80- 160	20 x 12½	1,800	400.00	8 x 10	900.00	15 x 10	950.00

Explanation. — Low-pressure engines are designed for 40 pounds initial pressure. Engine sizes 6 x 8, 8 x 8, 8 x 10, 12 x 8 and 15 x 10 are of regular horizontal type. All others are of regular vertical type, but can be arranged horizontally as shown.



THE STURTEVANT DISC FAN
WITH
DIRECT-CONNECTED HORIZONTAL ENGINE.

THE STURTEVANT

DISC FANS.

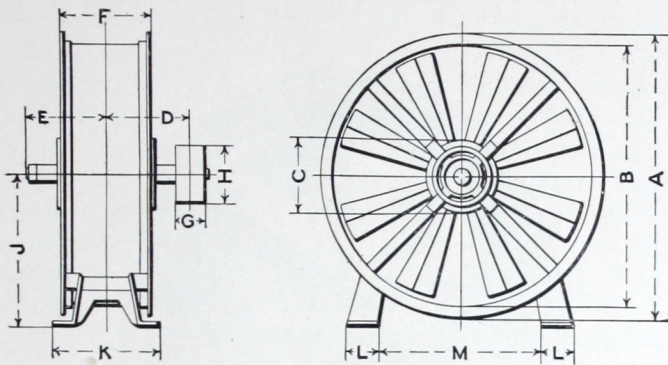
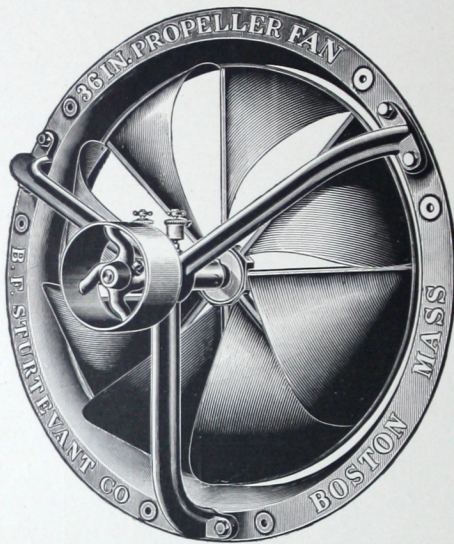


TABLE OF PRINCIPAL DIMENSIONS. ALL DIMENSIONS ARE IN INCHES.

Dia. of Fan.	A	B	C	D	E	F	G	H	J	K	L	M
18 in.	19	19	4½	8¼	7⅝	9½	2½	4	11	10	1¾	12½
24 "	25	25	4½	8¾	8	10½	2½	5	14	11	2	17
30 "	33¼	30¾	7½	10¼	9⅞	11½	3½	6	17½	12½	2½	21
36 "	39¼	36¾	7½	10¾	10⅞	12½	4½	7	20½	14	3	26
42 "	46	43	9	12	11¼	13½	4½	8	24	15½	3½	29
48 "	52	49	9	12½	12¾	14½	5½	8	27	17	4	34
54 "	58	55	10	13	13¼	15½	5½	9	30	18½	4½	39
60 "	64	61	10	13⅝	14⅞	16½	6½	10	33	20	5	44
66 "	71½	67½	10	16¼	17¼	18½	7½	10	37	22½	5½	47
72 "	77½	73½	16	17½	18¾	21	7½	12	40	25½	6	52
84 "	89½	85½	16	19¼	20¾	24	8½	14	46	29½	7	60
96 "	101½	97½	16	21¾	23¾	27	10½	16	52	33½	8	70
108 "	113½	109½	16	23¾	26¼	30	12½	18	58	36½	9	80
120 "	125½	121½	16	26¼	30	33	14½	20	64	39½	10	90



THE STURTEVANT
PROPELLER FAN.

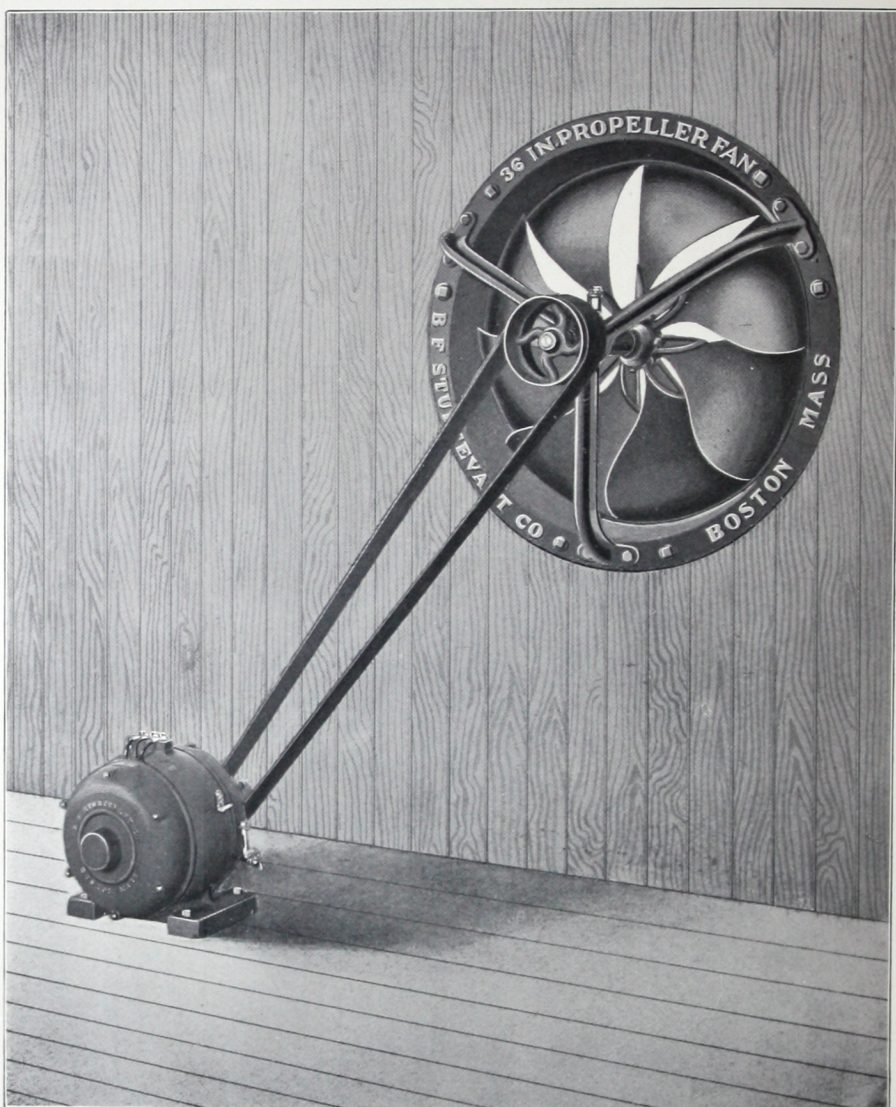
THE STURTEVANT PROPELLER FANS.

Application.— The Sturtevant Propeller Fan is employed for the same general purpose as the Sturtevant Disc Fan, viz., the movement of large volumes of air under low pressures. It is, however, of much higher efficiency, owing to the special features of its design and construction.

Construction.— The blades are so formed as to pick up the air at the inlet edge at low velocity, to move it forward in an axial direction, and when well under the influence of the blade to discharge it at maximum velocity. As a natural result, the efficiency is very high. In sizes below the 60-inch the wheel is partially enclosed within a conoidal inlet ring of cast iron, which decreases the frictional resistance. In larger sizes the ring and tripod support are respectively of steel plate and steel beam construction. These fans are fitted with engines in the same manner as the disc fans or may be driven by belted or direct-connected electric motors, as illustrated on succeeding pages.

Diameter of Fan.	Revolutions per Minute.	Fan with Pulley.			Fan with Engine.			
		Dia. and Face of Pulley.	Weight in Lbs.	Price.	For High Pressure.		For Low Pressure.	
					Size Engine.	Price.	Size Engine.	Price.
18 in.	550-1100	4 x 2½	60	\$40.00			2½ x 2	\$200.00
24 "	400- 800	5 x 2½	125	50.00			3 x 2½	220.00
30 "	325- 650	6 x 3½	160	65.00	2½ x 2	\$200.00	3½ x 3	240.00
36 "	275- 550	7 x 4½	225	80.00	2½ x 2	220.00	4 x 4	260.00
42 "	235- 470	8 x 4½	400	100.00	3 x 2½	250.00	4 x 4	280.00
48 "	200- 400	8 x 5½	465	120.00	4 x 4	275.00	6 x 4	325.00
54 "	175- 350	9 x 5½	600	150.00	4 x 4	300.00	6 x 4	350.00
60 "	165- 330	10 x 5½	575	185.00	4 x 4	325.00	6 x 4	375.00
66 "	150- 300	10 x 6½	720	220.00	5 x 5	360.00	8 x 5	410.00
72 "	135- 270	12 x 6½	950	250.00	5 x 5	400.00	8 x 5	450.00
84 "	120- 240	14 x 7½	1,125	300.00	6 x 6	500.00	10 x 6	550.00
96 "	100- 200	16 x 7½	1,375	350.00	6 x 6	550.00	10 x 6	600.00
108 "	90- 180	18 x 8½	1,700	400.00	6 x 8	700.00	12 x 8	750.00
120 "	80- 160	20 x 8½	2,000	500.00	8 x 8	800.00	12 x 8	850.00

Explanation.— Engine sizes 6 x 8, 8 x 8, and 12 x 8 are of regular horizontal type. All others are of regular vertical type, but can be arranged horizontally except in case of 2½ x 2 and 3 x 2½. Low-pressure engines are designed for 40 pounds initial pressure.



THE STURTEVANT PROPELLER FAN

WITH
BELTED ELECTRIC MOTOR.

THE STURTEVANT PROPELLER FANS.

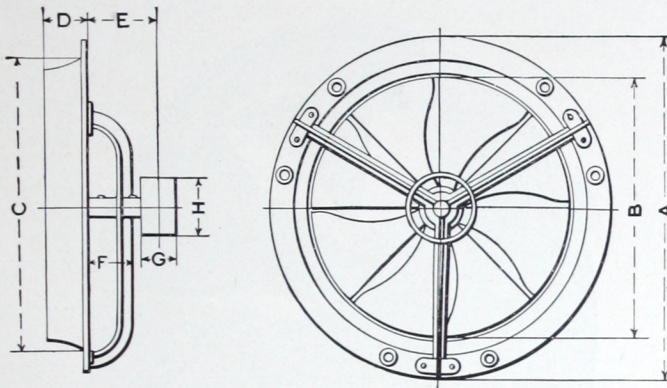
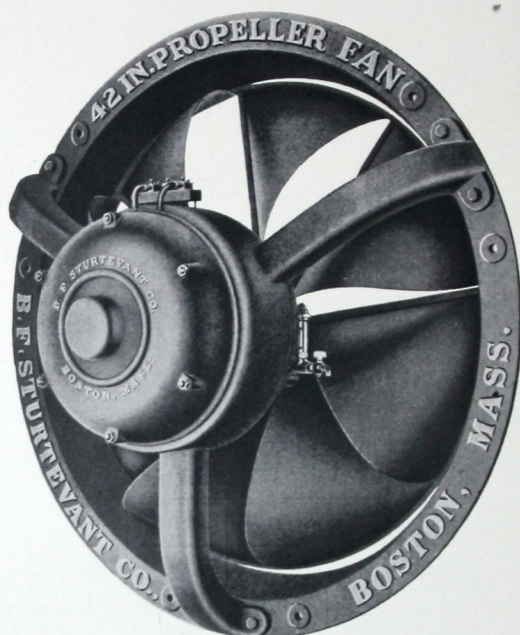


TABLE OF PRINCIPAL DIMENSIONS.

ALL DIMENSIONS ARE IN INCHES.

Dia. of Fan.	A	B	C	D	E	F	G	H
18 in.	23 $\frac{1}{4}$	18	20 $\frac{1}{2}$	3 $\frac{1}{4}$	6 $\frac{1}{4}$	4	2 $\frac{1}{2}$	4
24 "	31	24	27	4 $\frac{1}{4}$	6 $\frac{3}{8}$	4	2 $\frac{1}{2}$	5
30 "	38	30	33	4 $\frac{3}{4}$	8	5	3 $\frac{1}{2}$	6
36 "	44	36	39 $\frac{1}{2}$	5 $\frac{1}{2}$	11 $\frac{5}{8}$	7 $\frac{1}{2}$	4 $\frac{1}{2}$	7
42 "	52 $\frac{1}{4}$	42	45 $\frac{1}{4}$	6 $\frac{1}{2}$	12 $\frac{1}{8}$	7 $\frac{3}{4}$	4 $\frac{1}{2}$	8
48 "	59	48	52	7 $\frac{1}{2}$	15	8	5 $\frac{1}{2}$	8
54 "	65 $\frac{1}{2}$	54	58 $\frac{1}{2}$	8 $\frac{1}{2}$	15 $\frac{1}{4}$	8 $\frac{1}{4}$	5 $\frac{1}{2}$	9
60 "	72	60	65	9 $\frac{1}{2}$	16 $\frac{1}{2}$	9 $\frac{1}{2}$	5 $\frac{1}{2}$	10
66 "	79	66	72	10	18	10	6 $\frac{1}{2}$	10
72 "	84	72	78	11	19 $\frac{1}{2}$	11	6 $\frac{1}{2}$	12
84 "	97	84	91	13	24	13	7 $\frac{1}{2}$	14
96 "	111	96	103	15	26	15	7 $\frac{1}{2}$	16
108 "	124	108	116	17	30	17	8 $\frac{1}{2}$	18
120 "	136	120	128	19	34	19	8 $\frac{1}{2}$	20



THE STURTEVANT
ELECTRIC PROPELLER FAN
WITH ENCLOSED BI-POLAR MOTOR.

THE STURTEVANT ELECTRIC PROPELLER FANS.

Application.—The Electric Propeller Fan occupies a larger field of usefulness than the belt-driven disc or propeller fan, due to the fact that it can be placed in any location and only requires electric connection.

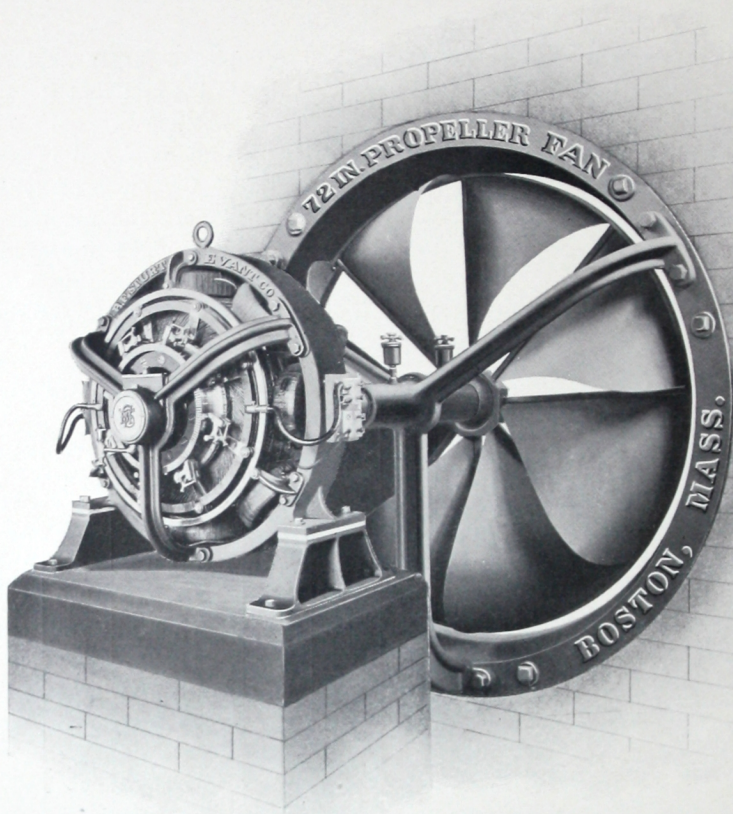
Construction.—The fan wheel is identical with that employed in the pulley type. In small and medium sizes the motor is of the enclosed type, accurately centered and rigidly held within a tripod support, the fan being carried upon the extended motor shaft. The motor is of standard Sturtevant make, designed for continuous operation at high speed without overheating.

Large fans are usually equipped as shown on next page, the motor, of the eight-pole pattern, being supported upon an independent pedestal.

Dia. of Fan.	Medium Speed.					Maximum Speed.				
	Approx. Speed.	H. P. Requi'd.	Motor Size Number.	Weight in Lbs.	Price.	Approx. Speed.	H. P. Requi'd.	Motor Size Number.	Weight in Lbs.	Price.
18 in.	800	$\frac{1}{8}$	$\frac{1}{4}$ E. B.	115	\$170	1,000	$\frac{1}{4}$	$\frac{1}{4}$ E. B.	115	\$170
24 "	600	$\frac{1}{6}$	$\frac{1}{4}$ E. B.	165	180	800	$\frac{1}{2}$	$\frac{1}{2}$ E. B.	255	220
30 "	500	$\frac{3}{8}$	$\frac{1}{2}$ E. B.	280	230	675	$\frac{3}{4}$	1 E. B.	330	260
36 "	425	$\frac{1}{2}$	1 E. B.	380	280	550	1	2 E. B.	440	370
42 "	350	$\frac{5}{8}$	2 E. B.	575	400	470	1 $\frac{1}{2}$	3 E. B.	760	500
48 "	300	$\frac{3}{4}$	3 E. B.	825	500	410	2	5 E. B.	925	600
54 "	260	1	5 E. B.	1,025	600	365	2 $\frac{1}{2}$	7 $\frac{1}{2}$ M.P.4	1,075	700
60 "	235	1 $\frac{1}{4}$	7 $\frac{1}{2}$ M.P.4	1,050	725	325	3	1-100 M.P.8	1,000	850
66 "	210	1 $\frac{1}{2}$	1-100 M.P.8	1,150	On Application.	300	4	1 $\frac{1}{2}$ -100 M.P.8	1,275	On Application.
72 "	195	2	1-100 M.P.8	1,375		275	5	2-100 M.P.8	1,750	
84 "	165	2 $\frac{1}{2}$	1 $\frac{1}{2}$ -100 M.P.8	1,675		235	6 $\frac{1}{2}$	4-100 M.P.8	2,325	
96 "	145	3	2-100 M.P.8	2,175		200	7 $\frac{1}{2}$	4-100 M.P.8	2,575	
108 "	130	3 $\frac{1}{2}$	4-100 M.P.8	2,900		185	9 $\frac{1}{2}$	6-100 M.P.8	3,200	
120 "	115	4 $\frac{1}{2}$	4-100 M.P.8	3,200		165	12	10-100 M.P.8	4,200	

Explanation.—All motors are built enclosed and dust proof except the 8-pole which are regularly built open but may be made enclosed to order. All motors can be wound for 115 and 230-volt circuit, and all but $\frac{1}{4}$ E. B. and $\frac{1}{2}$ E. B. for 500 volts. Price includes speed controller, by means of which the fan can be operated at different speeds.

"Medium speed" is the standard speed for ordinary ventilating work; fans with motors for this speed are carried in stock except in the larger sizes. "Maximum speed" is for excessive work. For the latter, larger motors are required, and must be made to order.



THE STURTEVANT
ELECTRIC PROPELLER FAN
WITH 8-POLE MOTOR.

THE STURTEVANT ELECTRIC PROPELLER FANS.

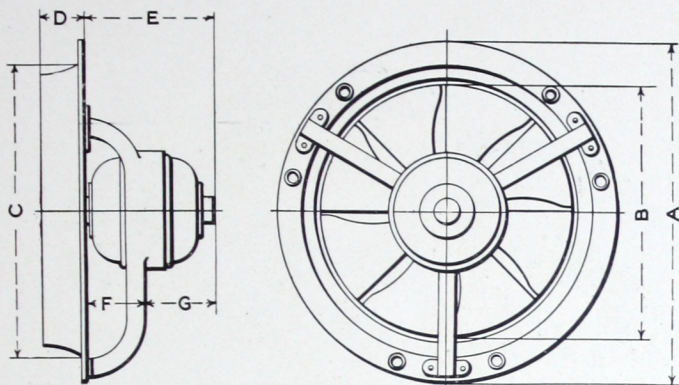
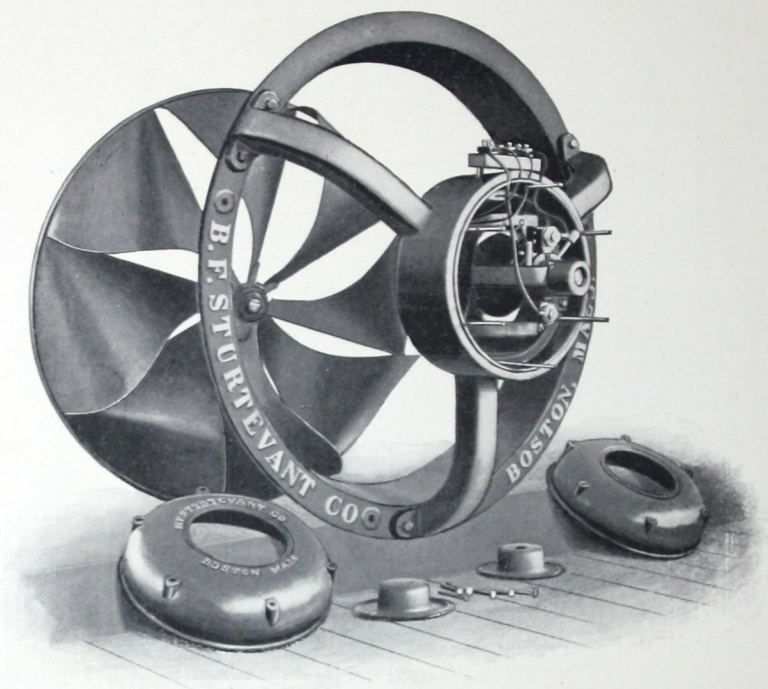


TABLE OF PRINCIPAL DIMENSIONS. ALL DIMENSIONS ARE IN INCHES.

Dia. of Fan.	Both Speeds.				Medium Speed.				Maximum Speed.			
	A	B	C	D	Motor.	E	F	G	Motor.	E	F	G
18 in.	23 $\frac{1}{4}$	18	20 $\frac{1}{2}$	3 $\frac{1}{4}$	$\frac{1}{4}$ E.B.	11	4 $\frac{11}{16}$	6 $\frac{5}{16}$	$\frac{1}{4}$ E.B.	11	4 $\frac{11}{16}$	6 $\frac{5}{16}$
24 "	31	24	27	4 $\frac{1}{4}$	$\frac{1}{4}$ E.B.	11 $\frac{3}{16}$	5 $\frac{3}{16}$	6	$\frac{1}{2}$ E.B.	14 $\frac{3}{8}$	6 $\frac{3}{8}$	8
30 "	38	30	33	4 $\frac{3}{4}$	$\frac{1}{2}$ E.B.	14 $\frac{7}{8}$	6 $\frac{7}{16}$	8 $\frac{7}{16}$	1 E.B.	16 $\frac{3}{16}$	7 $\frac{9}{16}$	9 $\frac{5}{8}$
36 "	44	36	39 $\frac{1}{2}$	5 $\frac{1}{2}$	1 E.B.	16 $\frac{11}{16}$	7 $\frac{1}{2}$	9 $\frac{3}{16}$	2 E.B.	18 $\frac{7}{8}$	8 $\frac{3}{8}$	10 $\frac{1}{2}$
42 "	52 $\frac{1}{4}$	42	45 $\frac{1}{4}$	6 $\frac{1}{2}$	2 E.B.	19 $\frac{3}{8}$	8 $\frac{1}{4}$	11 $\frac{1}{8}$	3 E.B.	23 $\frac{5}{16}$	11	12 $\frac{5}{16}$
48 "	59	48	52	7 $\frac{1}{2}$	3 E.B.	22 $\frac{3}{8}$	8 $\frac{3}{8}$	14	5 E.B.	25	11	14
54 "	65 $\frac{1}{2}$	54	58 $\frac{1}{2}$	8 $\frac{1}{2}$	5 E.B.	25	11	14	7 $\frac{1}{2}$ M.P.4	28 $\frac{1}{4}$	14	14 $\frac{1}{4}$
60 "	72	60	65	9 $\frac{1}{2}$	7 $\frac{1}{2}$ M.P.4	28 $\frac{1}{4}$	14	14 $\frac{1}{4}$	1-100 M.P.8	18	9 $\frac{1}{2}$	8 $\frac{1}{2}$
66 "	79	66	72	10	1-100 M.P.8	18	9 $\frac{1}{2}$	8 $\frac{1}{2}$	1 $\frac{1}{2}$ -100 M.P.8	18 $\frac{1}{2}$	9 $\frac{1}{2}$	9
72 "	84	72	78	11	1-100 M.P.8	18	9 $\frac{1}{2}$	8 $\frac{1}{2}$	2-100 M.P.8	22 $\frac{1}{2}$	11 $\frac{1}{4}$	11 $\frac{1}{4}$
84 "	97	84	91	13	1 $\frac{1}{2}$ -100 M.P.8	18 $\frac{1}{2}$	9 $\frac{1}{2}$	9	4-100 M.P.8	23 $\frac{3}{4}$	11 $\frac{1}{2}$	12 $\frac{1}{4}$
96 "	111	96	103	15	2-100 M.P.8	22 $\frac{1}{2}$	11 $\frac{1}{4}$	11 $\frac{1}{4}$	4-100 M.P.8	23 $\frac{3}{4}$	11 $\frac{1}{2}$	12 $\frac{1}{4}$
108 "	124	108	116	17	4-100 M.P.8	23 $\frac{3}{4}$	11 $\frac{1}{2}$	12 $\frac{1}{4}$	6-100 M.P.8	28 $\frac{1}{4}$	13 $\frac{1}{4}$	15
120 "	136	120	128	19	4-100 M.P.8	23 $\frac{3}{4}$	11 $\frac{1}{2}$	12 $\frac{1}{4}$	10-100 M.P.8	34 $\frac{3}{4}$	16 $\frac{1}{4}$	18 $\frac{1}{2}$

Explanation.— Although an M.P.8 machine may be arranged as illustrated above and in accordance with the tabulated dimensions, it is usually installed upon an independent pedestal as shown on opposite page. Dimension F still remains the same, but E and G are increased in proportion to the length of the shaft connecting the motor and fan.



DETAILS OF
THE STURTEVANT
ELECTRIC PROPELLER FAN.

